

### **REMARKS**

In response to the Office Action mailed January 27, 2006, the Applicant respectfully requests that the Examiner consider the following remarks. Claims 1, 3, 4, 8-14, 16, 17, 21-26, and 29-36 have been amended, and claims 2 and 15 have been canceled without prejudice. As a result, claims 1, 3, 4, 8-14, 16, 17, 21-26, and 29-36 are still pending in the application. The Applicant respectfully requests further examination and reconsideration of the application in light of the remarks.

#### **Specification**

The Examiner objected that new Figure 4 has not been described in the specification. In light of the objection, the Applicant respectfully refers the Examiner's attention to the amendment filed on December 3, 2002, which was the amendment that added new Figure 4. In that amendment, the Applicant also amended the specification to refer to new Figure 4. Accordingly, the Applicant respectfully submits that new Figure 4 has already been described in the specification, and the objection may be properly withdrawn.

#### **Rejection of Claims 1-4, 8-17, 21-26, and 29-36 Under 35 U.S.C. § 103(a)**

The Examiner rejected claims 1-4, 8-17, 21-26, and 29-36 under 35 U.S.C. § 103(a) as being obvious over Culpepper et al. in view of Szabo. The Applicant respectfully traverses the rejection.

Culpepper et al. does not teach or suggest the use or benefits of a slight curvature such as set forth in the claimed invention. First of all, the Applicant

respectfully traverses the Examiner's assertion that Culpepper et al. shows a vinyl siding panel comprising planar portions. In particular, each of the figures of Culpepper et al. shows a siding panel having significantly curved rows, so it cannot be fairly said that Culpepper et al. shows a siding panel having planar portions.

Furthermore, although the Applicant and the Examiner seem to be in agreement about unsupported inferences being made from the drawings, the Examiner has also asserted that Culpepper et al. shows a siding panel that inherently has a slight curvature. The Applicant must respectfully traverse this assertion. As set forth in the claims, a "slight curvature" is not a mere generality. In particular, the meaning of a "slight curvature" is mathematically defined. Culpepper et al. does not teach or suggest a siding panel having a "slight curvature" as defined in the claims.

Contrary to the inferences made by the Examiner, the accompanying declaration explains that those of ordinary skill in the art prior to the present invention did not contemplate a siding unit comprised of a vinyl siding panel having a slight curvature. As described in the declaration, a common amount of curvature used in the siding industry is characterized by at least about 0.130-0.170 inch of surface variance or less than approximately 10-25 inches of radius curvature for a row of a siding panel having a width of at least four inches. There is no motivation to infer that Culpepper et al. departed from standard industry practice by using a slight curvature.

As discussed in the accompanying declaration, significantly curved rows were commonly used in the siding industry to resist the effect of oil canning. This is

explained by Culpepper et al. in column 1, lines 30-49. In column 3, lines 6-31, Culpepper et al. theorizes that laminating an insulating board to the vinyl panel eliminates the need to design a concave set (i.e., rows having significant concave curvature such as explained in the accompanying declaration) into the face of the vinyl panel in order to resist the effect of oil canning. Thus, Culpepper et al. proposes that simply laminating an insulating board to the vinyl panel enables the use of a flat surface face (i.e., each row has a perfectly straight face) to more accurately simulate the appearance of straight face siding. Consequently, as explained in the accompanying declaration, Culpepper et al. teaches away from the present invention. In particular, contrary to the Examiner's assertion, Culpepper et al. teaches that no curvature is needed if an insulating board is laminated to the vinyl panel.

Contrary to the teaching of Culpepper et al. and as explained in the accompanying declaration, simply laminating the vinyl panel to an insulating board does not provide the desired resistance to oil canning. When the vinyl panel expands and contracts due to temperature changes over a period of time, the vinyl panel will still oil can. In particular, the vinyl panel will distort outwardly because of the presence of the insulating board. As a result, the panel taught by Culpepper et al. does not effectively simulate the appearance of straight face siding because of the effect of oil canning. Moreover, as set forth in the accompanying declaration, Culpepper et al. does not recognize that a slight curvature of a row of a siding panel may improve the resistance to oil canning while also helping to simulate the appearance of straight face siding.

In light of the shortcomings of Culpepper et al., the inventors have discovered that providing a slight curvature to a row of a siding panel improves the resistance to oil canning, particularly when used in combination with a reinforcement panel. Moreover, in direct contrast to the significant curvature used by the prior art, the slight curvature of the present invention is difficult to see with the naked eye. As a result, the slight curvature of the claimed invention still enables the siding unit to approximate the appearance of straight face siding.

In contrast to the significant curvature commonly used in the industry, a slight curvature of the claimed invention is characterized by less than about 0.05 inch of surface variance or at least about 85 inches of radius curvature for a row of a siding panel having a width of at least about four inches. As set forth in the accompanying declaration, the Applicant is unaware of any vinyl siding panel in the prior art having a slight curvature as set forth in the claimed invention.

Moreover, the Applicant is unaware of any siding unit comprising a vinyl siding panel having a slight curvature such that the siding unit simulates the appearance of straight face siding. In particular, the inventors have discovered that a siding panel having a slight curvature may significantly improve the performance and appearance of a foam-backed, vinyl siding panel. In particular, the slight curvature of the vinyl siding panel significantly increases the resistance to oil canning as compared to a conventional foam-backed, so-called straight face vinyl siding panel (such as proposed by Culpepper et al.). Moreover, the slight curvature of the vinyl siding panel enables

the resulting siding unit to approximate the appearance of straight face siding. In fact, while the foam backing panel may tend to further straighten out the vinyl siding panel, the built-in slight curvature of the siding panel still substantially increases the resistance to oil canning. As set forth in the accompanying declaration, the industry failed to recognize the substantial benefits that may be obtained by using a vinyl siding panel having a slight curvature in combination with a reinforcement panel (e.g., a foam backing panel) as set forth in the claimed invention.

In summary, the Applicant has shown that a slight curvature is critical for providing a siding unit that effectively simulates the appearance of straight face siding. In particular, the Applicant has surprisingly discovered that the slight curvature significantly improves the resistance to oil canning as compared to a conventional so-called straight face, foam-backed vinyl siding panel (such as proposed by Culpepper et al.). Furthermore, in direct contrast to the significant curvature used by the prior art, the slight curvature is difficult to see with the naked eye such that it enables the siding unit to simulate the appearance of straight face siding. The Applicant is unaware of any vinyl siding panel or siding unit in the prior art that is adapted to perform each of these functions. Moreover, as discussed above, Culpepper et al. teaches away from a siding panel having a slight curvature. In particular, Culpepper et al. teaches that the use of an insulating panel enables the total elimination of curvature in the siding panel. Therefore, the Applicant respectfully submits that Culpepper et al. in view of Szabo

cannot support the rejection of claims 1-4, 8-17, 21-26, and 29-36 under 35 U.S.C. § 103(a).

Rejection of Claims 1, 4, 8-14, 17, 21-26, and 29-36 Under 35 U.S.C. § 103(a)

The Examiner maintained the rejection of claims 1, 4, 8-14, 17, 21-26, and 29-36 under 35 U.S.C. § 103(a) as being unpatentable over Johnstone et al. in view of section 07460 of the Sweet Catalog. In particular, the Examiner maintained the assertion that the present specification does not disclose that a siding panel having the specific claimed dimensions provides an advantage, is used for a particular purpose, or solves a stated problem. The Examiner also maintained the assertion that the specific dimensions of the claimed invention are merely an obvious matter of design choice to provide a siding panel that accommodates the user's preference and various building structure requirements. The Applicant respectfully traverses the rejection.

In making the rejection, the Examiner relied heavily on the figures of the Sweet Catalog. In particular, the Examiner inferred that the figures of the Sweet Catalog show planar portions that have slightly curved surfaces. The Applicant again respectfully submits that this type of assumption by the Examiner is improper in light of Nystrom v. TREX Co. et al., No. 03-1092 (Fed. Cir. 2005). The Sweet Catalog does not state that the drawings are to scale. Moreover, the inference made by the Examiner relates to the specific proportions of the siding panels of the Sweet Catalog, but there is no express support in the Sweet Catalog for the inference that the siding panels have planar portions with slight curvatures. Thus, the Applicant respectfully traverses the inference

made by the Examiner concerning the proportions of the siding panels taught by the Sweet Catalog.

The accompanying declaration sets forth the history of the development of vinyl siding. The Applicant respectfully submits that the specification and the accompanying declaration discuss the problems of deformation and oil canning and describe how the claimed invention is the counterintuitive solution to the problems. Prior to the present invention, the siding industry had a need for a straight face, vinyl siding panel that is resistant to deformation and oil canning. The specification and the accompanying declaration discuss prior attempts to limit the effects of deformation and oil canning. Furthermore, the specification and the accompanying declaration describe that such design considerations limited and/or diminished the appearance of the vinyl siding. In fact, as explained above, Culpepper et al. also discussed oil canning. In order to solve the problem, Culpepper et al. suggested a significantly curved face portion or, if the siding panel would be bonded to an insulating member as set forth in that patent, a perfectly straight planar portion. Based on the 1997 filing date of Culpepper et al., those of ordinary skill in the art at that time already knew about the teachings of Johnstone et al. (issued in 1987) and the Sweet Catalog (published in 1995). Still, Culpepper et al. taught that there was an oil canning problem. Consequently, it is apparent that Johnstone et al. and the Sweet Catalog did not solve the problems of deformation or oil canning or provide the necessary motivation to solve the problem of obtaining a straight face, vinyl siding panel that is resistant to deformation and oil

canning. As a result, there is no motivation to infer that Johnstone et al. or the Sweet Catalog departed from standard industry practice by using a slight curvature. In fact, it is also described above how neither solution suggested by Culpepper et al. adequately addresses the problems. As a result, the cited references leave a need for a product that provides the dual benefits of providing the appearance of straight face vinyl siding while significantly limiting the effects of deformation and oil canning. As shown by the example provided on page 9 of the specification, the claimed invention addresses this need. The solution provided by the claimed invention was a surprising and counterintuitive breakthrough that was not dictated by any building code requirements.

In light of the accompanying declaration and the teaching of Culpepper et al., the Applicant maintains that Johnstone et al. and the Sweet Catalog fail to teach or suggest a siding unit as set forth in the claims. Neither reference expressly addresses the problems of deformation or oil canning, neither reference pertains to reinforced vinyl siding, and neither reference teaches or suggests any benefits of reducing the curvature of a siding panel of a siding unit as set forth in the claimed invention. Accordingly, the Applicant maintains the remarks that have been previously made regarding the teachings of Johnstone et al. and the Sweet Catalog. As a result, the combination of Johnstone et al. and the Sweet Catalog does not teach or even suggest the claimed invention, which provides the dual benefits of simulating the appearance of straight face vinyl siding while significantly limiting the effects of deformation and oil canning.



In summary, the Applicant has shown that a slight curvature is critical for providing a siding unit that effectively simulates the appearance of straight face siding. The use of a slight curvature as set forth in the claimed invention is not dictated by any building code requirements. The Applicant has surprisingly discovered that a slight curvature significantly improves the resistance to oil canning as compared to a conventional so-called straight face, foam-backed vinyl siding panel. Furthermore, in direct contrast to the significant curvature used by the prior art, a slight curvature is difficult to see with the naked eye such that it enables a siding unit to approximate the appearance of straight face siding. The Applicant is unaware of any siding unit in the prior art that is adapted to perform each of these functions. Moreover, as discussed above, there is no motivation provided by the Sweet Catalog to modify the siding panel of Johnstone et al. to have a slight curvature as set forth in the claimed invention. In particular, the Sweet Catalog does not recognize the problems of deformation and oil canning, and it does not recognize the benefits of having a slight curvature. In fact, neither Johnstone et al. nor the Sweet Catalog pertain to reinforced vinyl siding, and neither provide any suggestion or motivation to depart from standard industry practice by using a slight curvature. Therefore, the Applicant respectfully submits that Johnstone et al. in view of the Sweet Catalog cannot support the rejection of claims 1, 4, 8-14, 17, 21-26, and 29-36 under 35 U.S.C. § 103(a).

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Conclusion

The Applicant has distinguished claims 1, 3, 4, 8-14, 16, 17, 21-26, and 29-36 over the cited references. Therefore, the Applicant respectfully submits that the present application is now in condition for allowance, and such action is earnestly requested.

Respectfully submitted,

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